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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/690,652	10/22/2003	Clemens Auschra	CO/21-21950/A/CIP	5861

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EXAMINER	
SHOSHO, CALLIE E	
ART UNIT	**PAPER NUMBER**
1714	

DATE MAILED: 03/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/690,652	AUSCHRA ET AL.	
	Examiner	Art Unit	
	Callie E. Shosho	1714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 January 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4-14,17 and 19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4-14,17 and 19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. All outstanding rejections except for those described below are overcome by applicants' amendment filed 1/10/06.

In light of the new 35 USC 112, second paragraph rejection set forth in paragraph 4(a) below, the following action is non-final.

Claim Objections

2. Claim 13 is objected to because of the following informalities: the claim refers to claim 1 twice and is thus redundant. Given that line 1 of claim 13 already recites the dependency on claim 1, it is clear that In, X, p and q would also be as defined in claim 1.

It is advised that in line 2, the phrase "In, X, p and q are as defined in claim 1," is deleted.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 14, 17 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 14 recites "process for preparing a pigment dispersion comprising a dispersed phase consisting of "(a) a block copolymer of the formula I wherein In, A, B, X, x, y, p and q are as defined in claim 1". The scope of the claim is confusing given that claim 1 is drawn to process

for making composition not block copolymer. It is suggested that the details regarding the block copolymer are explicitly recited in claim 14, i.e. such that in the above recited phrase "I wherein In, A, B, X, x, y, p and q are as defined in claim 1" is replaced with the disclosure of lines 3-15 of claim 1. If applicants make this change suggested by the examiner, it is also suggested that in line 8, the phrase "wherein In, A, B, X, x, y, p and q are as defined in claim 1" is deleted.

Claim Rejections - 35 USC § 103

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 1, 4-7, and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Percec (U.S. 5,886,118).

The rejection is adequately set forth in paragraph 6 of the office action mailed 9/7/05 and is incorporated here by reference.

It is further noted that Percec discloses a process for preparing the composition comprising adding pigment and other additives such as dye and stabilizers to the block copolymer (col.6, lines 27-35).

7. Claims 1, 4-7, 9-14, 17, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pearlstine et al. (U.S. 6,087,416) or Kappele et al. (U.S. 6,063,834) either of which in view of Matyjaszewski et al. '937 (U.S. 5,807,937)

The rejection is adequately set forth in paragraph 9 of the office action mailed 9/7/05 and is incorporated here by reference.

It is further noted that Pearlstine et al. and Kappele et al. each disclose process for preparing composition comprising adding block copolymer dispersant to pigment particles to form pigment dispersion and then adding pigment dispersion to additional ink ingredients (Pearlstine et al. – col.9, lines 47-65 and Kappele et al. – col.9, lines 1-36).

8. Claims 1, 4-14, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Spinelli (U.S. 5,772,741) in view of Matyjaszewski et al. '937'060 (U.S. 6,512,060).

The rejection is adequately set forth in paragraph 11 of the office action mailed 9/7/05 and is incorporated here by reference.

It is further noted that Spinelli discloses process for preparing composition comprising adding block copolymer dispersant to pigment particles to form pigment dispersion and then adding pigment dispersion to additional ink ingredients (col.5, lines 18-24).

9. Claims 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Spinelli in view of Matyjaszewski et al. '937'060 as applied to claims 1, 4-14, and 17 above, and further in view of Zhu (U.S. 5,889,083).

The rejection is adequately set forth in paragraph 12 of the office action mailed 9/7/05 and is incorporated here by reference.

Response to Arguments

10. Applicants' arguments filed 1/10/06 have been fully considered but they are not persuasive.

Specifically, applicants argue that Percec only mentions pigment in passing.

However, although Percec only mentions pigment along with other additives, the fact remains that Percec does explicitly disclose pigment as required in the present claims.

Applicants also argue that there is no disclosure in Percec of dispersions or pigment composition.

It is agreed that there is no disclosure of process of preparing pigment dispersion which is why Percec is no longer utilized against present claim 14. However, with respect to claim 1, against which Percec is applied, it is noted that there is no requirement in this claim of pigment dispersion or pigment composition. Rather, claim 1 is drawn to process of preparing a composition comprising block copolymer and pigment which comprises copolymerizing by atom transfer radical polymerization (ATRP) and then adding pigment. Given that Percec also discloses adding pigment to block copolymer obtained by ATRP, i.e. living polymerization, it is the examiner's position that Percec does meet the requirements of the present claims.

Applicants also argue that there is no disclosure in Percec of dispersants of different polarities.

However, it is noted that Percec discloses block copolymer prepared from acrylonitrile and (meth)acrylic acid. Thus, the two blocks obtained from these monomers will clearly possess different amounts of functional groups given that one monomers contains little if any functional groups, i.e. acrylonitrile, while the other monomers necessarily possess certain amount of

functional monomers, i.e. meth(acrylic) acid. Although there is no explicit disclosure of the amount of functional monomers in each block, given that the functional groups disclosed by Percec, i.e. carboxyl groups, would effect the properties of the polymer such as water-solubility, it therefore would have been obvious to one of ordinary skill in the art to choose amounts of functional monomers present, including those presently claimed, in order to control the properties of the polymer, and thereby arrive at the claimed invention.

Further, it is noted that col.1, line 66-col.2, line 6 of Percec discloses block copolymer obtained from acrylonitrile and comonomer, i.e. (meth)acrylic, wherein the comonomer content is up to about 99 mol%. In light of the disclosure of this broad range of comonomer utilized, it is clear that blocks A and B of Percec would have different amount of functional monomers as required in the present claims.

Applicants argue that the combination of Pearlstine et al. or Kappele et al. with Matyjaszewski et al. '937 is deficient given that neither Pearlstine et al. or Kappele et al. favors pigment or provides clear teaching of pigment polymer dispersion.

However, it is noted that Pearlstine et al. disclose that the use of pigment is preferred (col.3, lines 4-5) and also discloses pigment dispersion (col.3, line 39-col.4, line 17 and col.9, lines 47-65). Further, Kappele et al. disclose the use of pigment dispersion (col.9, lines 1-36).

While Pearlstine et al. and Kappele et al. each disclose pigment dispersion comprising block copolymer and pigment, there is no disclosure of specific block copolymer as presently claimed which is why each of Pearlstine et al. and Kappele et al. is used in combination with

Matyjaszewski et al. '937 which discloses the use of block copolymer as presently claimed wherein the block copolymer is suitable for use in inks.

Applicants argue that there is no teaching in Matyjaszewski et al. '937 of block copolymers wherein the different in polarity is obtained by copolymerizing polymer blocks A and B with different amounts of functional monomer.

However, it is noted that Matyjaszewski et al. '937 disclose block copolymer prepared from monomers M^1 and M^2 which can each be (meth)acrylic acid, (meth)acrylates, acrylonitrile, etc. Thus, the two blocks obtained from these monomers will clearly possess different amounts of functional groups given that one monomers contains little if any functional groups, i.e. (meth)acrylate, while the other monomers necessarily possess certain amount of functional monomers, i.e. meth(acrylic). Although there is no explicit disclosure of the amount of functional monomers in each block, given that the functional groups disclosed by Matyjaszewski et al. '937, i.e. carboxyl groups, would effect the properties of the polymer such as water-solubility, it therefore would have been obvious to one of ordinary skill in the art to choose amounts of functional monomers present, including those presently claimed, in order to control the properties of the polymer, and thereby arrive at the claimed invention.

Applicants argue that there is no motivation to combine Spinelli with Matyjaszewski et al. '060 given that there is no disclosure of block copolymer that functions as dispersant as presently claimed.

However, firstly it is noted that there is no requirement in present claim 1 regarding dispersant or pigment dispersion. Claim 1 only requires process for making a composition comprising block copolymer and pigment.

Secondly, it is noted that Spinelli discloses process for preparing composition comprising adding block copolymer dispersant to pigment particles to form pigment dispersion and then adding pigment dispersion to additional ink ingredients. However, there is no disclosure in Spinelli of block copolymer as presently claimed which is why Spinelli is used in combination with Matyjaszewski et al. '060 which discloses copolymer as presently claimed.

While there is no disclosure in Matyjaszewski et al. '060 that the block copolymer functions as a dispersant given that Matyjaszewski et al. '060 disclose nonionic block copolymer, i.e. obtained from hydrophilic monomer such as hydroxyethyl methacrylate and hydrophobic monomer, and given that Spinelli discloses the use of nonionic block copolymer dispersant, it is clear that the block copolymer of Matyjaszewski et al. '060 would inherently function as dispersant.

Applicants also argue that there is no disclosure in Spinelli or Matyjaszewski et al. '060 of block copolymers wherein the different in polarity is obtained by copolymerizing polymer blocks A and B with different amounts of functional monomer.

However, it is noted that Matyjaszewski et al. '060 disclose block copolymer prepared from hydrophilic monomer such as hydroxyethyl acrylate or dimethylaminoethyl methacrylate and hydrophobic monomer such as butyl acrylate, etc. Thus, the two blocks obtained from these monomers will clearly possess different amounts of functional groups given that one monomers contains little if any functional groups, i.e. butyl acrylate, while the other monomers necessarily possess certain amount of functional monomers, i.e. hydroxyethyl acrylate or dimethylaminoethyl methacrylate. Although there is no explicit disclosure of the amount of functional monomers in each block, given that the functional groups disclosed by Matyjaszewski

et al. '060, i.e. hydroxyl groups or amino groups, would effect the properties of the polymer such as water-solubility, it therefore would have been obvious to one of ordinary skill in the art to choose amounts of functional monomers present, including those presently claimed, in order to control the properties of the polymer.

Applicants also argue that the combination of Spinelli with Matyjaszewski et al. '060 does not disclose the preparation of pigment dispersion wherein no organic solvents are present. Applicants argue that such composition is one of the advantages of the present invention.

However, in light of the open language of the present claims, i.e. "comprising", it is clear that the composition or pigment dispersion is open to the inclusion of additional ingredients including solvent.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 571-272-1123. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Callie E. Shosho
Primary Examiner
Art Unit 1714

CS
3/24/06